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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/524,843 | 02/17/2005 | Yasuyuki Kawahara | 050085 | 1074 |
| 23850 7590 07/02/2007 KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. Suite 400 WASHINGTON, DC 20005 | | | EXAMINER GOLOBOY, JAMES C | |
| | | | ART UNIT 1714 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,843

Applicant(s)

KAWAHARA ET AL.

Examiner

James Goloboy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/17/05 & 5/6/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 5-18, 20-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (U.S. Pat. No. 3,360,547) in view of Papay (U.S. Pat. No. 5,652,201).

In column 3 lines 55-70, Wilson discloses a series of synthetic ester lubricants, and in lines 67-68 discloses that the diesters of 3-methyl-1,5-pentanediol with propionic and hexanoic acids are among this class. These esters meet the limitations of claims 1(a) and 5-6. It is the examiner's position that Wilson's teaching that further acids than the ones disclosed ("and the like", column 3 line 68), renders obvious the C₇-C₁₀ carboxylic acids, meeting the limitations of claims 7-12. In column 4 lines 15-17 differences between Wilson and the currently presented claims are:

i) Wilson does not teach the addition of a phenol or amine antioxidant to the composition. This relates to claims 1 and 13-15.

ii) Wilson does not teach the addition of a phosphorus-based compound of linear monocarboxylic acid. This relates to claims 16-19.

iii) Wilson does not teach the addition of a benzotriazoles-based or gallic acid-based compounds. This relates to claims 20-23.

iv) Wilson does not teach the viscosity of the lubricating composition. This relates to claim 24.

With respect to i), Papay teaches in column 40 lines 29-36 that lubricating compositions typically contain one or more antioxidants, including phenolic and amine antioxidants as recited in claim 1(b). In column 40 lines 37-46, Papay teaches numerous phenolic antioxidants with between 6 and 100 carbon atoms, meeting the limitations of claim 13, and more specifically 2,6-di-tert-butylphenol, 4-ethyl-2,6-ditertbutylphenol, and 4,4'-methylenebis(2,6-di-tert-butylphenol), as recited in claims 14-15. From column 40 line 59 through column 41 line 22 Papay teaches amine antioxidants with between 6 and 60 carbon atoms also as in claim 13, and more specifically in column 41 lines 6-18 alkyldiphenylamines where the alkyl groups are preferably octyl or nonyl, meeting the limitations of claims 14-15. In column 41 lines 52-58 Papay teaches that the phenolic and amine antioxidants can be used in combination, as in claim 15.

With respect to ii), Papay teaches in column 43 lines 67-68 and column 44 lines 15-36 phosphorus-containing antiwear agents for lubricants, meeting claim 16, and

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including numerous examples of antiwear agents containing from 12 to 70 carbon atoms, as in claim 17. In column 44 line 18, Papay teaches that tricresyl phosphate, meeting claim 18(c3), tris(tridecyl) phosphate, meeting claim 18(c1), tributyl phosphite, meeting claim 18(c4), triphenyl phosphite, meeting claims 18(c5), and dibutyl phosphite, meeting claim 18(c10), as suitable antiwear agents. In column 44 lines 37-45, Papay teaches that fatty acids such as linoleic acid and oleic acid can also be antiwear agents, meeting the limitations of the aliphatic linear monocarboxylic acids of claims 16-18.

With respect to iii), Papay teaches in column 41 lines 61-65 that corrosion inhibitors are preferred additives for lubricants, and in column 42 line 2 that benzotriazoles, meeting the limitations of claims 20-22, is such a corrosion inhibitor. With respect to iv), Papay teaches from column 49 line 66 through column 50 line 2 that the amounts of the components present in the lubricating composition are varied based on the viscosity characteristics desired in the finished product. It is the examiner's position that the concentrations of the components, and therefore the viscosity of the composition, is a result effective variable because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, claim 24 is rendered obvious by the teachings of Wilson and Papay.

It would have been obvious to one of ordinary skill in the art to include the additives of Papay in the composition of Wilson in order to inhibit oxidative degradation

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of the lubricant, inhibitor wear of the lubricated surfaces, and to inhibit corrosion of the surfaces.

4. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Papay as applied to claims 1, 5-9, 11, 13-18, and 20-22 above, and further in view of Cook (U.S. Pat. No. 2,281,676).

The discussion of Wilson and Papay in paragraph 3 above is incorporated here by reference. Wilson and Papay teach a lubricating composition meeting the limitations of claim 1, but do not disclose a composition further comprising the fatty acids recited in claim 19.

Cook discloses a lubricating composition, and in column 2 lines 4-35 teaches that myristic, palmitic, and stearic acids, which are also known as n-tetradecanoic, n-hexadecanoic, and n-octadecanoic acids respectively, meeting the limitations of the fatty acids in claim 19 and also claims 16-18, are useful as corrosion inhibitors in this composition.

It would have been obvious to one of ordinary skill in the art to include the corrosion inhibitors of Cook in the composition of Wilson and Papay in order to prevent corrosion of the surfaces being lubricated.

5. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Papay as applied to claims 1, 5-9, 11, 13-18, and 20-22 above, and further in view of Rudston (U.S. Pat. No. 3,790,478).

The discussion of Wilson and Papay in paragraph 3 above is incorporated here by reference. Wilson and Papay teach a lubricating composition meeting the limitations of claim 16, and Papay further teaches in column 41 lines 63-65 that the composition can comprise a mixture of compounds as a corrosion inhibitor. Wilson and Papay do not disclose gallic acid-based corrosion inhibitors.

Rudston, in column 4 lines 25-32, teaches that alkyl gallates, particularly propyl gallate, are preferred corrosion inhibitors in cases where a lubricant is used in lead-containing engines. In column 3 lines 14-36 Rudston teaches that the lubricant is a synthetic ester-based lubricant. Propyl gallate meets the limitations of the gallic acid-based compound of claims 20-22, and using propyl gallate in combination with benzotriazoles meets the limitations of claim 23. Additionally, as Rudston teaches that the alkyl group of the gallate may have between 1 and 20 carbon atoms, octyl gallate and dodecyl gallate, also as recited in claim 23, are encompassed as well.

It would have been obvious to one of ordinary skill in the art to include the gallate corrosion inhibitors of Rudston in the composition of Wilson and Papay, in order to inhibit lead corrosion, as taught by Rudston.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 8-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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